Panelist Position Statement

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Abstract

Four areas of overlapping interest in joint industrial/academic symposia on high assurance systems are proposed as meriting additional attention.

Four Shared Issues

The challenge addressed by this panel is how to structure a symposium so that both industrial and academic participants benefit. Proposed elements of a solution are:

- **Collaborative Empirical Studies.** Encourage joint efforts by researchers and industrial practitioners to empirically evaluate new methodologies. On the industrial side, this involves providing access to filtered data, perhaps through an in-house intermediary or an automated filtering tool. On the academic side, this invovles evaluation of research results in a production setting with increased attention to cost/benefit measurements [2].
- **High Assurance Benchmarks.** Develop benchmarks, model problems, and specification exemplars that accurately represent key open problems faced by developers of high assurance systems [3]. Some of these benchmarks may be specific to a particular domain, e.g., robotic navigation or flight instrumentation displays, while others may capture properties of concern across multiple application areas.
- **Technology Transfer is Hard.** Recognize that many of the gaps perceived between academics and industry also exist internally to industry. That is, similar tensions between short-term production demands and long-term research, between economic justication and advances in knowledge, as well as the same competition for resources, also exist within companies. This doesn't make the problem of technology transfer any easier, but it does suggest that it is a shared burden with many success stories. We know, for example, that managing tool integration, better training, finding high-level management sponsorship, and rapid adapation to change are elements of success [1].
- **Education.** Use academic/industrial collaborations to facilitate the training of next-generation researchers and developers. Three aspects of this educational goal are as follows: (1) More exposure to high-assurance systems in coursework materials [4]. (2) More exposure to toolsets used in developing high-assurance systems. Since such toolsets are often too costly to be available to students, industrial support for such access is often welcome. (3) Continued support for internships and cooperative work/study positions for students.

Objectives for a symposium, then, include identification of a community of researchers and practitioners with similar interests, provision of opportunities for informal discussion, evaluation of new tools and techniques from multiple viewpoints, and timely dissemination of both research results and open problems in the field.

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